

Power Business Line - Capital

Funding Schedule by Activity (Accrued Expenditures)

	(dollars in thousands)				
	FY 2003	FY 2004	FY 2005	\$ Change	% Change
Associated Project Costs	98,880	111,400	116,000	+4,600	+4.1%
Fish & Wildlife	11,633	36,000	36,000	0	0.0%
Conservation & Energy Efficiency	25,078	30,000	36,000	+6,000	+20.0%
Total, Power Business Line - Capital	135,591	177,400	188,000	+10,600	+6.0%

Description

Associated Project Costs provide for direct funding of additions, improvements and replacements of existing Bureau of Reclamation (Bureau), and U.S. Army Corps of Engineers (Corps) hydroelectric projects in the Pacific Northwest. The Bureau and Corps provide power production, which is marketed by Bonneville, and invest in additions, improvements, and replacements that provide for increased performance and availability of generating units.

Maintaining the availability and increasing the efficiency of the FCRPS is critical to ensuring that the region has an adequate, reliable and low-cost power system. The FCRPS represents about 80% of Bonneville's power supply, and is composed of 31 operating Federal hydro electric projects with over 200 generating units. These projects have an average age of over 45 years, with some that exceed 60 years of age. Through direct funding, and the close cooperation of the Corps and Bureau, Bonneville uses its borrowing authority to make investments needed to restore generation availability and improve efficiency, eliminating demand on Corps and Bureau appropriations for power-related investments. Since the beginning of direct funding, Bonneville has significantly improved system performance - generation availability is up to 89 percent as of last year. In 1999, at the direction of Congress, Bonneville issued a report that it soon began to implement called the "Asset Management Strategy for the FCRPS." Bonneville concluded in this report that it needed to invest nearly \$1 billion in the projects over the next 12 –15 years. Without these investments, that are focused on restoring and maintaining the reliability of the system, history indicates that unit availability may decline at a rate of about 1.5% per year. Supplementary analysis and experience with the system has revealed additional investment needs above and beyond the levels originally planned under the Asset Management Strategy for this and the next five-year rate periods.

These planned investments, included in these FY 2005 budget's funding estimates, will maintain the output of the FCRPS. Moving forward with these cost-effective opportunities to expand the generation and to preserve and enhance the capability of the Federal system is a smart economic and environmental decision when compared to purchasing power from the market to serve Pacific Northwest electricity needs.

The Fish and Wildlife program provides for the protection, enhancement and mitigation of Columbia River Basin fish and wildlife due to losses attributed to the development and operation of hydroelectric projects on the Columbia River and its tributaries, pursuant to Section 4(h) of the Northwest Power Act. Bonneville satisfies a major portion of its fish and wildlife responsibilities and meets the Administrator's obligation under the Northwest Power Act by funding projects and activities designed to be consistent with the Northwest Power and Conservation Council's (Council) Fish and Wildlife Program.

Bonneville is also mandated to implement measures called for under the Endangered Species Act. These measures are part of the biological opinions issued in December 2000 by the National Oceanic and Atmospheric Administration Fisheries (NOAA Fisheries) and the U.S. Fish and Wildlife Service (USFWS), to address the effects of the operation of the FCRPS on threatened and endangered salmon and Endangered Species Act-listed Kootenai River – white sturgeon and bull trout. The biological opinions require the Action Agencies (Corps, Bureau, and Bonneville) to implement actions throughout the Columbia River Basin that comprehensively address all the life stages of Endangered Species Act (ESA)-listed fish. The Action Agencies released a Final FY 2003-2007 Implementation Plan for the FCRPS on November 6, 2002, that identifies and describes the specific measures that the three agencies plan to implement in FY 2003-2007 and addresses the actions called for in the NOAA Fisheries and USFWS 2000 Biological Opinions for the FCRPS. The Implementation Plan, together with projects undertaken to address mitigation for non-listed species under the NW Power Act, form the basis for Bonneville's planned capital investment of \$36 million for FYs 2004 and 2005.

Bonneville's fish and wildlife capital program is directed at activities that increase numbers of Columbia River Basin fish and wildlife resources including projects designed to increase juvenile and adult fish passage in tributaries and at mainstream dams, and increase fish production and survival through construction of hatchery and acclimation facilities, fish monitoring facilities and land acquisitions. Funding is also included for pre-engineering design and studies for new and developing projects. Capital project funding will focus on integrating ESA-related priorities with the Council's Fish and Wildlife Program.

The FY 1997 Energy and Water Appropriations Act added section 4(h)(10)(D) to the Northwest Power Act, directing the Council to appoint an Independent Scientific Review Panel "to review projects proposed to be funded through that portion of Bonneville's fish and wildlife budget that implements the Planning Council's fish and wildlife program." And, "... in making its recommendations to Bonneville, the Planning Council shall consider the impact of ocean conditions on fish and wildlife populations; and shall determine whether the projects employ cost effective measures to achieve program objectives." The Conference Report on the FY 1999 Energy and Water Development Appropriations Act included a new assignment for the Independent Scientific Review Panel (ISRP) and the Council. The ISRP was to review the fish and wildlife projects, programs, or measures included in Federal agency budgets that are reimbursed, and/or directly funded, by Bonneville and to make funding recommendations to Congress. The ISRP was directed to determine whether the proposals are consistent with the scientific criteria in the Northwest Power Act as amended in 1996, and provide a report to the Council by April 1 of each year. The Council, in turn, must report to Congress annually by May 15.

Consistent with the principles of the Federal Caucus' *Final Basinwide Salmon Recovery Strategy* (All-H Strategy), Bonneville is implementing much of the off-site mitigation actions required by the year 2000 Biological Opinions through the Council's Fish and Wildlife Program. Under the 1980 Northwest Power Act, the Fish and Wildlife Program is tasked with protecting, mitigating and enhancing Columbia River Basin fish and wildlife affected by the development and operation of the FCRPS. The Provincial Review process, sponsored by the Council, provides the mechanism for integrating activities under the existing Fish and Wildlife Program with the measures focused on ESA-listed fish stocks in the NMFS and USFWS Biological Opinions.

When acquiring resources to meet planned future loads, the Northwest Power Act requires the Administrator to first consider and acquire resources through cost-effective conservation that the Administrator determines is consistent with the Northwest Power and Conservation Council's Power Plan to reduce loads. The Council's Power Plan specifies that Bonneville's share of the regional, cost-effective conservation target will be about 220 aMW for the current rate period (FYs 2002-06). In addition, the Council's Power Plan, currently under revision, further estimates that Bonneville's target will be another 250 to 300 aMW of conservation in the FY 2007 to 2011 period. Bonneville anticipates that between 100 and 200 aMW of this amount will be acquired under its capital conservation acquisition program.

Conservation was key to the recent effort to reduce Bonneville's power delivery obligations as a way of limiting the impact of volatile and high market prices on Bonneville's rates. Conservation is an important part of Bonneville's diverse portfolio of resources that provides a reliable approach to meeting Bonneville's load obligations.

Long-term investments in energy efficiency help buffer the FCRPS against future resource uncertainties. During periods of price volatility, conservation also helps reduce financial risk associated with relying on the market for energy purchases in the future.

Detailed Justification

(dollars in thousands)

	FY 2003	FY 2004	FY 2005
Associated Project Costs.	98,880	111,400	116,000

Work with both the Corps and the Bureau to reach mutual agreement on those capital improvement projects that need to be budgeted and scheduled, are cost-effective and provide system or site specific enhancements, increase system reliability, or provide efficiencies.

(dollars in thousands)

FY 2003	FY 2004	FY 2005
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The work is focused on improving the reliability of the FCRPS, increasing its generation efficiency through turbine runner replacements and optimization of hydro facility operation, and small capital reimbursements associated with routine maintenance activities. Also, limited investments may be made in joint use facilities that are beneficial to both the FCRPS operations and to other Corps and Bureau operations.

■ **Corps of Engineers (known projects to date):**

FY 2003: Continued work on Power System Reliability Improvements. Continued refurbishment/replacement of head gates and the gantry crane at Bonneville Dam. Continued repair work of the fish unit generator and generator rewedging at Bonneville. Continued main unit and station service breaker replacements at selected projects. Continued work on oil/water separators at Lower Snake River projects. Completed work on replacing main unit annunciation and continue work on the 480-volt distribution system and CO2 system at Chief Joseph. Completed replacement of DC power supplies at John Day and The Dalles. Selected a prototype turbine runner for McNary. Continued hydro optimization investigations system wide. Tested prototype replacement governors at several plants. Began implementation of Cougar modernization. Continued exciter replacements at John Day. Continued with turbine runner replacement at Ice Harbor, Unit #2. Continued battery system upgrade at McNary. Began replacement and upgrades on protective relays and fire protection at Lower Snake River projects, plus a variety of smaller continuing or new investments and repairs for failed units.

FY 2004: Complete work on Power System Reliability Improvements on Lower Columbia River projects and continue on Lower Snake River projects and other selected sites. Continue main unit and station service breaker replacements at selected projects. Continue work on oil/water separators at most projects. Continue hydro optimization investigations and equipment installations system wide. Continue work on governor replacements at selected projects. Continue refurbishment/replacement of head gates and gantry crane at Bonneville Dam. Continue rewedging at Bonneville. Continue with turbine runner replacement and modernization at McNary. Continue Cougar modernization. Continue exciter replacements at John Day. Continue with CO2 system installation at Chief Joseph. Continue with turbine replacements at Chief Joseph. Continue runner replacement and begin crane rehabilitation and generator rewind at Ice Harbor. Purchase replacement generator winding for Lower Granite and Detroit. Continue replacement of exciters at Lower Monumental and Lower Granite. Continue gate rehabilitation at Ice Harbor. Continue replacement and upgrades on protective relays and fire protection at Lower Snake River projects. Begin intake crane rehabilitation at The Dalles, plus a variety of smaller continuing or new investments and repairs to failed units.

(dollars in thousands)

FY 2003	FY 2004	FY 2005
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FY 2005: Complete work on Power System Reliability Improvements on Lower Snake River projects and selected other sites. Continue main unit and station service breaker replacements/improvements at selected projects. Continue work on oil/water separators at most projects. Continue hydro optimization investigations and equipment installations system wide. Continue work on governor replacements at selected projects. Continue refurbishment/replacement of head gates, finish gantry crane and continue work on gantry crane at Bonneville Dam. Begin replacement of unwatering pumps and HVAC systems at Bonneville Dam. Continue rewedging at Bonneville. Continue with turbine runner replacement and modernization at McNary. Finish Cougar modernization. Finish exciter replacements at John Day. Finish CO2 system installation at Chief Joseph. Continue with turbine replacements at Chief Joseph. Continue crane rehabilitation, runner replacement and generator rewind at Ice Harbor. Complete replacement of generator winding at Detroit. Continue with generator winding replacements for Lower Granite. Continue replacement of exciters at Lower Monumental and Lower Granite. Begin replacement of exciters at Lost Creek. Complete gate rehabilitation at Ice Harbor. Continue and/or complete replacement and upgrades on protective relays and fire protection at Lower Snake River projects. Replace heat pump at Little Goose. Purchase spare transformers for selected sites. Begin generator rewinds and other rehabilitation work at The Dalles (completion of original rehabilitation project begun by Corps using appropriations). Continue intake crane rehabilitation at The Dalles, plus a variety of smaller continuing or new investments and repairs to failed units.

■ **Bureau of Reclamation (known projects to date):**

FY 2003: Continued Grand Coulee runner replacements. Continued Grand Coulee repairs associated with station service fire including generator rewind of unit #4. Continued elevator rehabilitation at Grand Coulee. Continued breaker replacement at Grand Coulee and other projects. Began air housing cooler replacement at Grand Coulee. Continued Grand Coulee pump-generator circuit addition and transformer replacement. Began modifications to Grand Coulee Arrival Center. Began replacement of air compressors at Grand Coulee. Continued hydro optimization investigations and equipment installations at Grand Coulee. Continued with Hungry Horse and began Anderson Ranch life-safety modifications. Continued Boise Diversion modernization. Completed unit breakers at Anderson Ranch and began at Palisades. Continued with design and purchase of new turbine runner for Chandler. Began transformer replacement at Green Springs, plus a variety of smaller continuing or new investments and repairs to failed units.

(dollars in thousands)

FY 2003	FY 2004	FY 2005
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FY 2004: Continue Grand Coulee runner replacements. Complete Grand Coulee repairs associated with station service fire and finish generator rewind of unit #4. Complete elevator rehabilitation at Grand Coulee. Continue breaker replacement at Grand Coulee and other projects. Continue with air housing cooler replacement at Grand Coulee. Complete Grand Coulee pump-generator circuit addition and transformer replacement. Continue with modifications to Grand Coulee Arrival Center. Continue with replacement of air compressors at Grand Coulee. Purchase spare winding for Grand Coulee. Continue hydro optimization investigations and equipment installations at Grand Coulee. Begin SCADA replacement at Grand Coulee. Continue with Hungry Horse and complete Anderson Ranch life-safety modifications. Complete Boise Diversion modernization. Continue unit breaker replacements at Palisades. Continue with turbine runner replacement for Chandler. Continue with transformer replacement at Green Springs, plus a variety of smaller continuing or new investments and repairs to failed units.

FY 2005: Continue Grand Coulee runner replacements. Continue breaker replacements at Grand Coulee. Continue with air housing cooler replacement at Grand Coulee. Continue Grand Coulee pump-generator circuit addition and transformer replacement. Complete modifications to Grand Coulee Arrival Center. Complete replacement of air compressors at Grand Coulee. Continue with SCADA replacement at Grand Coulee. Purchase spare winding for Grand Coulee. Continue hydro optimization investigations and equipment installations at Grand Coulee. Complete Hungry Horse life-safety modifications. Continue with unit breaker replacements at Palisades. Continue with turbine runner replacement for Chandler. Continue with transformer replacement at Green Springs, plus a variety of smaller continuing or new investments and repairs to failed units.

Fish and Wildlife.	11,633	36,000	36,000
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Although the regional prioritization process and independent scientific review for projects to be recommended for funding in FY 2005 is not complete, and is not expected to be completed until early in FY 2004, the following projects may be candidates for capital funding in FY 2005. It is Bonneville's intention to proceed with design and construction of those projects from this list that are recommended for funding within the available budget. The costs indicated are preliminary estimates only and actual costs may be greater or lower than those estimates depending on final design and construction costs.

FY 2003-2004 efforts include continued implementation of high priority ESA related projects and activities associated with the FY 2000 NMFS (now NOAA Fisheries), and USFWS Biological Opinions. Projects may include a genetics analysis and education facility and a Hatchery Safety Net Program for up to ten ESA-listed salmon and steelhead populations if determined to be necessary by formulation of Hatchery Genetic Management Plans and Genetic Risk Analyses. Implementation of reforms to hatchery programs may also be warranted as information on the types of changes to these facilities are established and priorities for sequencing implementation are developed through the Council's Artificial Production Review Committee. Projects that meet the Reasonable and Prudent Measures (RPA's) and other high priority measures in the NMFS and USFWS Biological Opinions are also described in the action agencies (Corps of Engineers and Bureau of Reclamation) Annual Implementation Plan for FY 2002. Bonneville may include capitalization of investment in land acquisition for fish and wildlife, provided such costs exceed \$1 million, and such investment provides a creditable and quantifiable benefit against a defined obligation for Bonneville.

Anadromous fish supplementation, production, and/or juvenile and adult passage improvement projects that may require capital funds in FY 2005 include the following:

- Yakima River Spring Chinook Supplementation Facility, located in Cle Elum, Washington: This project includes the construction of an interpretive building for public education and for the design and construction of a monitoring and evaluation building at Nelson Springs for use by project biologists.

- Johnson Creek Summer Chinook Salmon restoration, located in the South Fork Salmon Basin of Idaho: This project may include development and construction of facilities for adult collection and holding, juvenile rearing, and acclimation. The design and construction is expected to continue.

- Upper Snake River Spring Chinook Salmon captive broodstock acclimation and adult collection facilities, to be located on the Upper Grande Ronde River near La Grande, Oregon, on Catherine Creek near Union, Oregon, and on Lostine River near Enterprise, Oregon: The design and construction is expected to continue. This project, as a measure in the Council's Fish & Wildlife Program, would also identify and develop artificial propagation facilities to protect and enhance salmon and steelhead native to the Imnaha and Walla Walla River Basins.

- Salmon Creek restoration and enhancement of anadromous fish populations and habitat in Salmon Creek: This project would provide instream flows through on-farm water conservation and water leasing, design of a river pump station, an upgrade to the Salmon Lake Feeder Canal, and design for channel restoration. A hatchery feasibility study for supplementation of currently listed salmon and steelhead populations under the ESA is under discussion with the Bureau and may be appropriate for Bonneville funding, with construction potentially funded by the Bureau.

- Walla Walla River Juvenile and Adult Passage Improvements: This project would provide safe passage for migrating juvenile and adult salmonids in the Walla Walla Basin by constructing and maintaining passage facilities at irrigation diversion dams and canals.
- Walla Walla Hatchery planning and design work.
- Continuation of acquisition and installation of Adult Pit tag monitors at selected Federal dams in Snake and lower Columbia rivers. The design and construction is expected to continue.
- Juvenile and adult PIT tag detection facilities throughout the Columbia River Basin.
- Mid-Columbia River coho restoration program. This project will continue planning and design of satellite acclimation facilities and a potential central coho production facility.
- Major irrigation diversion screening and consolidation programs in Oregon, Washington and Idaho.
- Yakima and Klickitat Rivers steelhead and coho restoration program: This project will initiate planning and conceptual design of satellite acclimation facilities and a potential central steelhead and coho production facility.
- Hood River spring chinook restoration program: This project will initiate planning and conceptual design for a central production facility and/or expansion of existing production facilities at Parkdale.
- Umatilla River Fish passage and habitat restoration pilot project (Westland-Ramos).

Land acquisitions that fulfill an identifiable and quantifiable portion of Bonneville's obligation to acquire "habitat units" to mitigate for inundation and construction related to Federal dams, and otherwise meet Bonneville's capitalization policy, will be purchased as available and prudent. Following are possible acquisitions.

(dollars in thousands)

FY 2003	FY 2004	FY 2005
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- Grand Coulee and Chief Joseph Wildlife Habitat Acquisition
- Couer d'Alene Fish and Wildlife Habitat Acquisition
- Albeni Falls Wildlife Mitigation.
- Blue Creek Winter Range Wildlife Habitat Acquisition
- Yakima Valley Fish and Wildlife Habitat Acquisition
- Grande Ronde Wildlife Habitat Acquisition
- Salmon River Fish Habitat Acquisition
- Montana Resident Fish Habitat Acquisitions at McWinnegar/Weaver Slough and Fisher River
- Fish and Wildlife Land Acquisition - Selah Gap to Union Gap.

Conservation and Energy Efficiency.	25,078	30,000	36,000
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The Conservation Augmentation (ConAug) program offers several ways for customers to participate in regional conservation. ConAug program components include: (1) utility programs, which include the request for Interest in Reducing Load Through Conservation (IRLC), which resulted in customer proposals to conserve energy through residential weatherization, commercial lighting and HVAC, industrial processes and lighting, and irrigated agriculture; (2) 3rd party Delivery programs, such as residential compact fluorescent lighting, "Vending Mi\$er"(a program to reduce energy use in regional refrigerated vending machines) and the Water and Waste Water Treatment Facilities program; (3) Federal programs to help Federal installations in the region reduce energy use, which includes the Federal Hatcheries program and work at various dams to help the Corps of Engineers and the Bureau of Reclamation in their efforts to reduce energy use; and (4) other initiatives still in the design stage.

Total Power Business Line – Capital	135,591	177,400	188,000
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Explanation of Funding Changes

FY 2005 vs. FY 2004 (\$000)

Associated Project Costs

- The increase reflects the original 12-year investment program outlined in the 1999 Asset Management Strategy and with consideration of inflation, maintains investment levels at a relatively constant amount. +4,600

Fish and Wildlife

- No change 0

Conservation and Energy Efficiency

- Reflects a shift of the capital funding to later in the rate period to better match the pace of actual deliveries by ConAug participants and to help with Bonneville's financial situation.. . . . +6,000

Total Funding Change, Power Business Line - Capital	<u>+10,600</u>
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